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10/698,988

10/31/2003

Brian M. Sager

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02/23/2007

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EXAMINER

PATTERSON, MARC A

ART UNIT

PAPER NUMBER

1772

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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3 MONTHS

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/698,988

Applicant(s)

SAGER ET AL.

Examiner

Marc A. Patterson

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/1/07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-37 is/are pending in the application.
- 4a) Of the above claim(s) 37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-36 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>12/1/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION
WITHDRAWN REJECTIONS

1. The 35 U.S.C. 102(b) rejection of Claims 12 – 14, 20 – 21, 23 – 25, 27 – 30 and 34 – 35 as being anticipated by Brinker et al (U.S. Patent No. 6,264,741 B1), of record on page 2 of the previous Action, is withdrawn.
2. The 35 U.S.C. 103(a) rejection of Claims 16 – 17 as being unpatentable over Brinker et al (U.S. Patent No. 6,264,741 B1) in view of Singh et al (WO 00/78540), of record on page 2 of the previous Action, is withdrawn.
3. The 35 U.S.C. 103(a) rejection of Claims 18 – 19 as being unpatentable over Brinker et al (U.S. Patent No. 6,264,741 B1) in view of Ogawa et al (U. S. Patent No. 5,372,888), of record on page 2 of the previous Action, is withdrawn.

Election/Restrictions

4. Newly submitted claim 37 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claim 37 is directed to a photovoltaic device.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 37 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

NEW REJECTIONS

Claim Objections

5. Claim 18 is objected to because of the following informalities: Claim 18 appears to be redundant, as Claim 12 already defines the organic polymer layers as consisting of one organic polymer that is superhydrophobic. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 12, 16 – 17 and 36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not unclear from the original specification what the exact composition is that provides the claimed permeability to water vapor and oxygen, although page 4, lines 22 – 27 state that a number of permeabilities may be achieved by using suitable layers.

8. Claim 27 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that

the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claimed polymers are not cited in the specification as being superhydrophobic.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 36 is rejected under 35 U.S.C. 102(b) as being anticipated by Brinker et al (U.S. Patent No. 6,264,741 B1).

With regard to Claim 36, Brinker et al discloses an inorganic / organic (column 3, lines 9 – 10) nanolaminate (column 3, line 30) film (column 3, line 66) which has a plurality of layers of an inorganic material (silicate layers, therefore discrete layers comprising multiple layers or lamellae and consisting of silicate and having a different composition from a polymer layer; column 4, line 30) and a plurality of layers each consisting of an organic polymer (column 4, lines 63 – 64), therefore hydrophobic, wherein the layers of organic polymer alternate with the layers of inorganic material (column 3, lines 15 – 20) wherein the adjacent layers of the film are covalently bonded layers characterized by direct organic polymer – inorganic material covalent bonds (column 5, lines 33 – 35); the inorganic material therefore presents a long and tortuous path to an underlying substrate (tortuous path; column 5, lines 13 – 15); the organic material is hydrophobic (column 3, lines 15 – 20) and the film is a coating (column 3, line 51); the film is therefore a barrier film.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 12 – 21, 23 – 25, 27 – 30 and 34 – 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brinker et al (U.S. Patent No. 6,264,741 B1) in view of Dams (European Patent No. 1225188).

Brinker et al disclose a film comprising an organic polymer as discussed above. The film is a coating (column 3, lines 39) comprising a hydrophobic monomer (column 4, lines 20 – 25). With regard to Claims 12, 16 – 19, 25, 28 – 30 and 34 – 35, Brinker et al fail to disclose layers that are superhydrophobic and comprise fluoroalkylsilane.

Dams teaches a monomer comprising fluoroalkylsilane (paragraph 0008), therefore superhydrophobic, for a coating (paragraph 0052) for the purpose of obtaining a coating that is oil repellent (paragraph 0011). One of ordinary skill in the art would therefore recognize the advantage of providing for the monomer of Dams et al in Brinker et al, which comprises a coating, depending on the desired use of the end product.

It therefore would have been obvious for one of ordinary skill in the art to have provided for a superhydrophobic layer comprising fluoroalkylsilane in Brinker et al in order to obtain a layer that is oil repellent as taught by Ogawa et al.

With regard to Claim 13, as stated above, the film has between 100 and 1000 layers (column 3, line 44 – 46).

With regard to Claim 14, Brinker et al disclose a nanolaminate, as stated above, and therefore disclose layers of organic material having a thickness of 1 nm.

With regard to Claim 15, the film disclosed by Brinker et al is transparent (column 3, line 50).

With regard to Claims 20 – 21, the layers disclosed by Brinker et al are hydrophobic, as stated above, and therefore comprise layers made from polymer precursors to which a hydrophobic group comprising methyl has been added.

With regard to Claims 22, 26 and 31 – 33, Brinker et al disclose a Gemini surfactant (column 4, lines 45 – 46) and tubules (column 8, line 6) and layers which are self assembled (column 5, lines 7 – 31).

With regard to Claims 23 – 24 and 27, the film disclosed by Brinker et al is utilized a coating, as stated above; Brinker et al therefore disclose an article of manufacture having the film disposed on the surface.

ANSWERS TO APPLICANT'S ARGUMENTS

13. Applicant's arguments regarding the 35 U.S.C. 102(b) rejection of Claims 12 – 14, 20 – 21, 23 – 25, 27 – 30 and 34 – 35 as being anticipated by Brinker et al (U.S. Patent No. 6,264,741 B1), 35 U.S.C. 103(a) rejection of Claims 16 – 17 as being unpatentable over Brinker et al (U.S. Patent No. 6,264,741 B1) in view of Singh et al (WO 00/78540) and 35 U.S.C. 103(a) rejection of Claims 18 – 19 as being unpatentable over Brinker et al (U.S. Patent No. 6,264,741 B1) in

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view of Ogawa et al (U. S. Patent No. 5,372,888), of record on page 2 of the previous Action, of record in the previous Action, have been considered and have been found to be persuasive. The rejections are therefore withdrawn. The new rejections above are directed to amended Claims 12 - 36.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc A Patterson whose telephone number is 571-272-1497.

The examiner can normally be reached on Mon - Fri 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marc A. Patterson 2/10/07
Marc A. Patterson, PhD.
Primary Examiner
Art Unit 1772